PRELIMINARY AMENDMENT
Serial Number: Not Assigned
Filing Date: Herewith
Title: REDUCING QUANTIZATION ERRORS IN IMAGING SYSTEMS

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AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method comprising:

generating a first set of color values in a first color space;

dithering said first set of color values to generate <u>at least one</u> second sets of color values; and

transforming said <u>at least one</u> second sets of color values to a second color space<u>, such that the transformed at least one second set of color values in the second color space, when averaged, equal</u> in a display system to approximately reproduce said first set of color values.

2. (Original) The method of Claim 1 where each of said color values in said first set of color values comprises N bits, and wherein said dithering comprises:

truncating a least significant bit (LSB) of each color value in said first set of color values to obtain truncated color values; and

adding said LSB of each color value to a next color value.

3. (Original) The method of Claim 1 wherein said first set of color values comprises 8 bits/plane red, green, and blue (RGB) values, said dithering comprising truncating a least significant bit of each color value in said first set of color values to generate 7 bits/plane RGB values.

4. (Currently amended) The method of Claim 1 wherein said transforming comprises transforming said <u>at least one</u> second sets of color values into a printer color space.

5. (Currently amended) The method of Claim 4 wherein said first set of color values comprises 8 bits/plane RGB values, said <u>at least one</u> second sets of color values comprise 7 bits/plane RGB values, and colors in said second color space comprises 8 bits/plane primary colors in said display system.

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6. (Original) The method of Claim 1 wherein color values in said first color space comprise RGB values, and color values in said second color space comprise cyan, magenta, and yellow (CMY) values.

7. (Original) The method of Claim 1 wherein said dithering comprises adding noise to each of said color values in said first set of color values.

8. (Original) The method of Claim 7 wherein said adding noise comprises subtracting one from a color value, adding one to a color value, or not affecting said color value.

9. (Original) The method of Claim 7 wherein said noise is predetermined, random, or pseudo-random.

10. (Currently amended) The method of Claim 1 wherein said transforming comprises applying said at least one second sets of color values to a look-up table to transform said at least one second sets of color values to said second color space.

11. (Currently amended) The method Claim 1 wherein said transforming comprises performing an algorithm on said at least one second sets of color values to transform said at least one second sets of color values to said second color space.

12. (Original) The method of Claim 1 wherein said generating a first set of color values comprises generating color values on a computer in an RGB color space for display on a monitor.

13. (Original) The method of Claim 12 wherein said transforming transforms dithered RGB values to said second color space for printing by a printer.

14. (Original) The method of Claim 1 wherein said transforming generates transformed color values, said method further comprising printing said transformed color values.

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15. (Original) The method of Claim 1 wherein said transforming generates transformed color values, said method further comprising halftoning said transformed color values.

16. (Original) The method of Claim 15 wherein said halftoning generates halftoned color values, said method further comprising printing said halftoned color values by an inkjet printer.

17. (Currently amended) The method of Claim 1 wherein said dithering generates two or more ~~at least two~~ second sets of color values ~~for~~ from a first set of color values.

18. (Currently amended) An apparatus comprising:

a dithering device having as inputs a first set of color values in a first color space, said dithering device outputting at least one second sets of color values ~~for~~ from a first set of color values; and

a transformer receiving said at least one second sets of color values and transforming said at least one second sets of color values to a second color space, such that the transformed at least one second set of color values in the second color space, when averaged, equal the first set of color values. ~~of said first set of color values; for being displayed in a display system.~~

19. (Original) The apparatus of Claim 18 wherein said dithering device truncates a least significant bit (LSB) of each color value in said first set of color values and adds said LSB to a next color value.

20. (Original) The apparatus of Claim 18 wherein said dithering device adds noise to said first set of color values.

21. (Original) The apparatus of Claim 18 wherein said first color space is an RGB color space and said second color space is that used by a printer.

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22. (Original) The apparatus of Claim 21 wherein said second color space is a CMY color space.

23. (Original) The apparatus of Claim 21 wherein said second color space is a CMYK color space.

24. (New) The method of Claim 18, wherein the first set of color values comprises 8 bits/plane RGB values and at least one second set of color values comprises 7 bits/plane RBG values.

25. (New) A method comprising:

generating a first set of color values in a first color space;

dithering the first set of color values to generate varying sets of color values;

transforming the varying sets of color values into a second color space, such that the transformed sets of varying color values in the second color space, when averaged, equal the first set of color values; and

halftoning the transformed sets of color values, such that a visual perception of dots on a printed medium correspond to the average of the transformed varying sets of color values therein equalling the first set of color values.

26. (New) A method comprising:

generating a first set of color values in a first color space;

dithering said first set of color values to generate at least one second set of color values;

transforming said at least one second set of color values to a second color space, such that the transformed at least one second set of color values in the second color space, when averaged, equal said first set of color values; and

wherein said first set of color values comprises 8 bits/plane RGB values, said at least one second set of color values comprise 7 bits/plane RGB values.